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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/397,558	09/16/99	LAL P	PF-0527-1DIV

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LEGAL DEPARTMENT
INCYTE PHARMACEUTICALS INC
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EXAMINER	
HARRIS,A	
ART UNIT	**PAPER NUMBER**
1642	11

DATE MAILED: 08/16/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/397,558	Lal et al.
Examiner	**Group Art Unit**
Alana M. Harris, Ph. D.	1642

☒ Responsive to communication(s) filed on *May 30, 2000.*

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1, 2, 14-18, and 21-27* is/are pending in the applicat

Of the above, claim(s) *14-18 and 23-26* is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1, 2, 21, 22, and 27* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 9, filed May 30, 2000.

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Response to Amendment

1. Claims 1 and 2 have been amended.

Claims 1, 2, 14-18 and 21-27 are pending.

Claims 14-18, 20 and 23-26, drawn to non-elected inventions are withdrawn from examination.

Claims 1, 2, 21, 22 and 27 are examined on the merits.

Information Disclosure Statement

2. Examiner thanks Applicants for submitting documents that were not available for review during the First Action on the Merits. All documents have now been considered.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. The rejection of claims 1, 21, 22 and 27 are rejected under 35 U.S.C. 112, first paragraph, because the specification, does not reasonably provide enablement commensurate with the scope of the claimed invention is withdrawn in view of Applicants' amendments to the claims.

7. The rejection of claims 1, 2, 21, 22 and 27 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is withdrawn in view of Applicants' amendments.

8. The rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by either Accession #Q20236 (November 1996) is withdrawn in view of Applicants' amendment to the claim.

9. The rejection of claim 1 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent #5,723,315 is withdrawn in view of Applicants' amendment to the claim.

10. The rejection of claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by either Yu et al. (Genome Res. 7(4):353-8, 1997) or Andersson et al. (Anal. Biochem. 236(1):107-113), as evidenced by Accession #O75539 is maintained. Applicants state that they have not received any sequence comparison data. The Examiner has resubmitted the sequence data and accompanying references as indicated on the PTO-892. Yu et al. and Andersson et al., as evidenced by Accession #O75539 disclose a fragment of the amino acid sequence of SEQ ID NO:1 comprising at least 15 amino acids, wherein said fragment binds specifically with an anti-PGAMP-1 antibody.

11. The rejection of claim 27 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent #5,723,315 in view of Harlow and Lane (Antibodies, A Laboratory Manual, Cold Spring Harbor Laboratory, 1988) is withdrawn.

12. The rejection of claim 27 under 35 U.S.C. 103(a) as being unpatentable over Yu et al. and Andersson et al. in view of Harlow and Lane (Antibodies, A Laboratory Manual, Cold Spring Harbor Laboratory, 1988) is maintained for the reasons recited in paragraph 10.

New Grounds of Rejection

Claim Rejections - 35 U.S.C. § 112

13. Claims 1, 2, 21, 22 and 27 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The factors to be considered have been summarized as the quantity of experimentation necessary, the amount of direction or guidance presented, the presence of absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art,

the predictability or unpredictability of the art and the breadth of the claims. *Ex Parte Forman*, 230 USPQ 546 (BPAI 1986) and *In re Wands*, 858 F.2d731, 8 USPQ 2d 1400 (Fed. Cir. 1988).

The specification teaches the amino acid sequence of SEQ ID NO: 1 and SEQ ID NO:2. The sequence of SEQ ID NO:1 and 2, also referred to as prostate growth associated membrane proteins alleged to have applications in the treatment of neoplastic and reproductive disorders. However, the specification neglects to mention how the proteins, SEQ ID NO: 1 and 2 are to be used in the treatment or prevention of the aforementioned disorders, which encompasses a number of cancers from different organs. The specification fails to teach how to use SEQ ID Nos:1 and 2 as compounds that possibly can be used as diagnostic tools, therapeutics agents or as pharmaceutical agents. No notable correlation between prostate growth associated membrane proteins and the cancers listed on pages 25 and 26 of the specification have been established in order for use in the treatment of this disorder or as a preventive agent. Thus, undue experimentation would be required to use the instantly claimed polypeptides.

Finally, again given the undue experimentation required to use the claimed polypeptides, it would also require undue experimentation to use pharmaceuticals comprising the polypeptides.

14. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, because the specification, does not reasonably provide enablement commensurate with the scope of the claimed invention is made and maintained. The specification does not enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

Claim 2 is broadly drawn to polypeptides having at least 90% amino acid sequence identity to SEQ. ID. NO:1 and SEQ. ID. NO:2. The specification while being enabling for the polypeptide having the amino acid sequences of SEQ. ID. NO:1 and SEQ. ID. NO:2, does not reasonably provide enablement for variants that have at least 90% sequence identity. The Applicants argue that the specification is enabling for such an amino acid sequence, because it is a well know and routine matter to use a computer to predict a sequence and determine the percent identity between two molecules and thus one of skill in the art would have no difficulty in determining if a particular sequence shared at least 90% identity with SEQ ID NO:1. However, there is still 10% in which changes to polypeptide could exist that render variants that would not possess the specific function required to make a protein useful for the applications disclosed in the specification. Despite the fact that sequencing itself is highly automated and accurate, and despite the fact that sequence information is easily described, a 90% accuracy just to predict functional and structural features is tantamount. The specification doesn't teach what those are or how to determine what they are. This could possibly be a vast collection of polypeptides and the specification provides inadequate instruction to allow one skilled in the art to make and use the said polypeptides having at least 90% sequence identity with a reasonable expectation of success and without undue experimentation. What amino acid substitutions could be allowed to render the polypeptide the ability to still retain its alleged function? Peer Bork states on bridging

paragraph of pages 398 and 399 that "The expression of genes and their reciprocal proteins seem to correlate weakly... Furthermore, recent studies ...show that alternative splicing might affect...the human genes, ...Finally, the number of known post-translational modifications of gene products is increasing constantly, so that the complexity at the protein level is enormous." In essence there would be undue experimentation without a reasonable expectation of success to claim all polypeptides with 90% sequence identity to SEQ ID NO:1 or 2 without altering the function and activity of the encoded polypeptide. It would require undue experimentation to practice the invention to the full scope of the instant claim.

Claim Rejections - 35 U.S.C. § 101

15. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

16. Claims 1, 2, 21, 22 and 27 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

The applicant has asserted "The polypeptides ...could be used, ...to produce antibodies for detection of PGAMP-1, PAMG-2 and variants of such proteins in a tissue sample, so as to identify [hyperplastic] prostate tissue..." However, the polypeptides of the invention is completely uncharacterized functionally. Granted the Northern analysis shows that 48%of the libraries in

which PGAMP is expressed were made from hyperplastic prostate tissue the specification still alleges PGAMP-1's role in neoplastic and reproductive disorders in a number of organ systems in which these "prostate growth-associated proteins" could be expressed, i.e. breast, brain and the adrenal gland for example (see page 25). This reasonably conjures the question as to how selective the expression of the claimed proteins clearly is. Could these claimed proteins reasonably be selective and specific in their application of detecting a marker for **just** prostate assays/diagnoses when their expression can not be limited to just prostate? Accordingly, those skilled in the art cannot rely on this information to identify the expression of these polypeptides solely as specific markers in the prostate. Its function is not known and is not disclosed in the specification, which speculates merely that it is "associated" with the prostate. The specific association is not elucidated. None of the "associated" proteins claimed are known to be useful for the treatment of prostate disorders and/or cancer.

Claims 1, 2, 21, 22 and 27 are also rejected under 35 U.S.C. 112, first paragraph. Specifically since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reason set forth above, one skilled in the art clearly would not know how the use the claimed invention.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alana M. Harris whose telephone number is (703)306-5880. The examiner can normally be reached on Monday through Friday from 6:30 am to 3:00 pm. A message may be

left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa, can be reached on (703)308-3995. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)308-0196.

Alana M. Harris, Ph.D.
Patent Examiner, Group 1642
August 14, 2000

SHEELA HUFF
PRIMARY EXAMINER